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Rosenberg

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[54] BIT RATE CODER FOR DIFFERENTIAL QUANTIZATION

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[57] ABSTRACT

A feed-forward bit-rate control system that selects and formats DQUANT values in real time for optimal semantically-encoded image transmission by video-compression codecs complying with the ITU-T standards H.263 or H.263E. The system uses a prequantization process to reduce the computational load imposed by the quantizer optimization calculations required for feed-forward semantic coding bit-rate control. The H.263 CBPY and MCBPC coding tables are reordered so as to be indexed using an orthogonal flag-based index values and the RLA coding table is block-indexed using clipped amplitude values, for faster access into these tables. The system also uses a rate-assist process to assure that DQUANT values are provided in each edge macroblock that follows a transition to and from each semantically-defined region when the edge macroblocks have four motion vectors by reducing the number of motion vectors in the macroblock to one.

12 Claims, 6 Drawing Sheets

